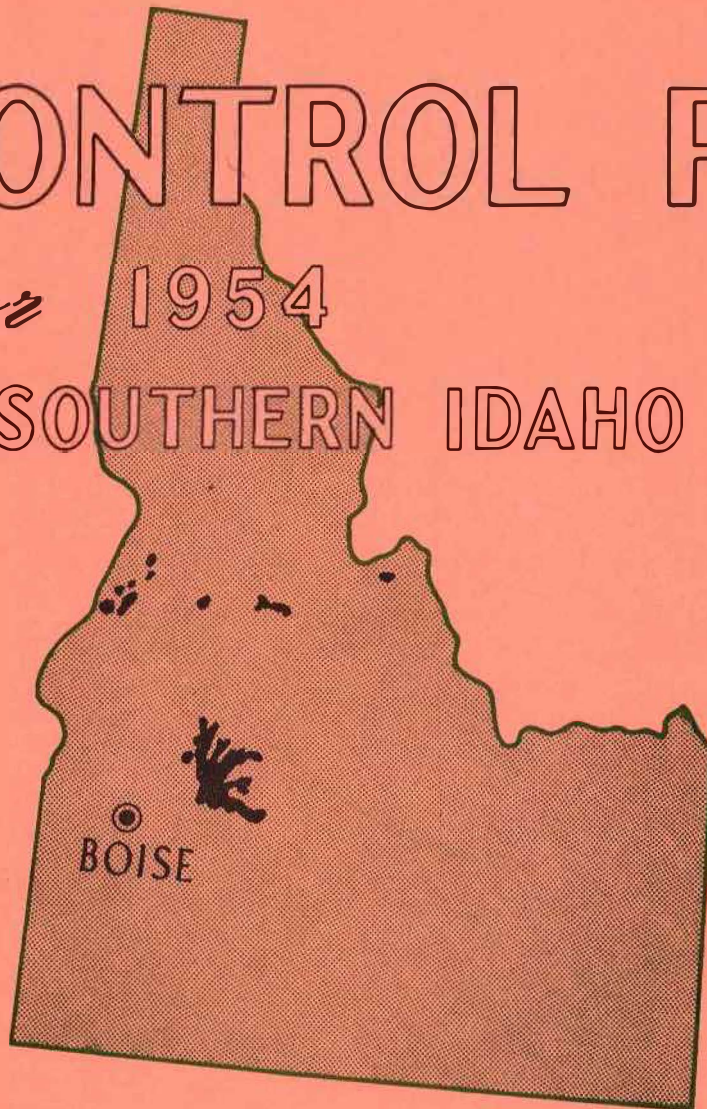


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# PINE BUTTERFLY - SPRUCE BUDWORM

## CONTROL PLAN

*for* 1954  
IN SOUTHERN IDAHO

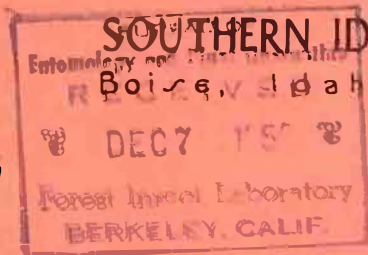


*Prepared by*

SOUTHERN IDAHO FOREST PEST ACTION COUNCIL

Boise, Idaho.

November, 1953



## ABSTRACT

Pine butterfly and spruce budworm outbreaks on the Boise, Payette and Salmon National Forests in southern Idaho immediately threaten the timber, recreational, watershed, and grazing values and the local economy of this section of the state. Cooperative surveys conducted in the fall of 1953 are the basis for the following recommendations by the Southern Idaho Forest Pest Action Council:

1. Aerial spraying with DDT should be done in 1954 to control the pine butterfly on about 169,000 acres of merchantable ponderosa pine timber having a stumpage value of \$33,040,000, at an estimated cost of \$245,000.
2. Similar spraying should be done in 1954 to control the spruce budworm on 197,500 acres of mixed fir timber valued at \$7,068,000, at an estimated cost of \$339,000.
3. Since the lands involved are nearly all under federal ownership, the projects should be financed with federal funds now available or to be provided under the Forest Pest Control Act.
4. Funds should be made available as soon as possible and not later than March 1, 1954, to permit orderly and efficient purchasing of insecticide and contracting for its transportation, storage, and application.

### SPONSORSHIP STATEMENT

This report and the recommendations contained herein are made as a result of Bureau of Entomology and Plant Quarantine aerial surveys and "on the ground" cooperative surveys made by employees of the Bureau, Boise and Payette National Forests, Bureau of Land Management, the State of Idaho, Southern Idaho Timber Protective Association and the Lumber Industry of Southern Idaho. It is prepared and sponsored by the South Idaho Forest Pest Action Council composed of representatives of the following:

State of Idaho Department of Forestry

State of Idaho Land Department

Keep Idaho Green Committee

South Idaho Forestry Association

South Idaho Lumber Industry

Western Pine Association

Southern Idaho Timber Protective Association

United States Bureau of Land Management

United States Forest Service

United States Bureau of Entomology and Plant Quarantine



## PINE BUTTERFLY-SPRUCE BUDWORM CONTROL PLANS FOR

1954 IN SOUTHERN IDAHO

### INTRODUCTION

The following plans for the control of the pine butterfly, Neophasia menapia, and the spruce budworm, Choristoneura fumiferana, in Southern Idaho by aerial spraying in 1954 are submitted by the Southern Idaho Forest Pest Action Council. They are ~~based upon~~ recent experience in similar projects in adjoining regions and the results of cooperative surveys conducted in the fall of 1953.

Control of the pine butterfly outbreak, involving about 169,000 acres, is of first importance because of the rapid killing action of this insect and the high stumpage value of ponderosa pine. The spruce budworm outbreak is more widespread but is slower in its killing action and involves timber of lower value. A total of 197,500 acres of the most heavily infested and most valuable mixed fir stands are recommended for treatment. The Council strongly urges that both projects be approved and provided for in 1954.

### THE PINE BUTTERFLY

#### History

Increases in the butterfly population on the Boise Forest have been noted each year since 1950 but severe defoliation was not observed until the summer of 1953. It was then realized that an outbreak was beginning and that extensive control operations would be needed in 1954. Arrangements were made for experimental spraying of a 400 acre block of infested timber on the Beaver Creek sale area. About 400 gallons of DDT-oil spray (one pound of DDT per gallon) was applied from a Ford Tri-motor plane on July 18, 1953. The kill of butterfly larvae, and also of the spruce budworm which is abundant on fir in this area, was excellent.

An indication of the seriousness of this outbreak is available from records of previous outbreaks. About one billion board feet of ponderosa pine was killed on the Yakima Indian Reservation in Washington during the period 1893-95. During the years 1921 to 1923 an outbreak in the Payette Lakes area of central Idaho resulted in severe defoliation of the pine on some 27,000 acres and the death of about 25 percent of the stand. These and other localized infestations have been relatively short-lived but, because the caterpillars eat both the

old and new needles, they have been very destructive. Furthermore, the western pine bark beetle usually builds up in numbers in the weakened stands and is an important factor in increasing the loss. Increment loss in defoliated trees that do survive is also an important consideration.

### Current Situation

The pine butterfly is now present in outbreak numbers in about 169,000 acres of high value ponderosa pine between Deadwood Reservoir and the Middle Fork of the Boise River, on the Boise National Forest. The larvae or caterpillars of this insect eat the needles of ponderosa pine and cause complete defoliation when they are present in sufficient numbers. Severe defoliation, on some trees amounting to more than 90 percent of both the old and new needles, occurred in July 1953 on eight different areas totaling about 8,000 acres, principally on high ridges. Many trees in these areas are now dying and should be salvaged in 1954.

An aerial survey was conducted in August while the adult butterflies were in flight. It was found that where the butterflies were present in large numbers they could be seen from a plane flying 400 to 500 feet above the tree tops. It was evident that tremendous numbers of butterflies developed in the "hot spots" or centers where severe defoliation occurred in 1953 and that they became widely dispersed during the flight period. About 130,000 acres of pine, in which large numbers of butterflies were observed, were mapped from the air. In September and October all interested public and private agencies cooperated by furnishing personnel and equipment for conducting an egg survey as a means of determining the overwintering population within the area mapped from the air and within a much larger surrounding area where the aerial survey had failed to detect large numbers of butterflies. This egg survey, together with study of type maps to make adjustments in acreages mapped from the air, resulted in the addition of 39,000 acres, making a total of about 169,000 acres that should be sprayed in 1954 to prevent severe defoliation and spread of the outbreak into additional area.

Brief descriptions of the control units recommended for spraying in 1954 are given in the section of this report entitled "CONTROL UNIT DATA". Resource values and control costs are listed in Table I.

## THE SPRUCE BUDWORM

### History

The spruce budworm has been present in the mixed fir stands of southern Idaho for many years, although there are no records of previous extensive killing of timber in this area. The present outbreak is much more severe and widespread than any previously recorded and is similar to the current outbreaks in Oregon, Washington, northern Idaho, and western Montana. It has been hoped that natural factors will check the insect before serious permanent damage occurs in the infested stands but it is now apparent that further delay in applying direct control will be disastrous.

### Current Situation

Aerial and ground surveys in 1953 disclosed a total of 197,500 acres of mixed fir timber on the Boise, Payette, and Salmon National Forests in which damage by the budworm has reached the stage where further defoliation will result in serious losses. Top-killing of trees is becoming prevalent in these stands and loss of a considerable part of their value is expected within the next two or three years if control by spraying is delayed any longer. Experience in the Oregon budworm control program has shown that where control spraying has been delayed too long there has been a serious loss in stand quality even though there may not be much actual killing of trees. A marked increase in losses caused by the Douglas-fir bark beetle has also been reported in Oregon and is expected in Idaho.

Some of the heaviest budworm infestations on the Boise Forest are in mixed pine-fir stands within the butterfly infested area. Spraying for control of the butterfly will also control the budworm in these mixed stands, if the work is properly timed, but it is felt that additional spraying must be done in adjacent budworm infested fir stands as a means of insuring the most efficient use of control funds. Budworm infested areas on the Payette and Salmon National Forests for which control action is recommended, are not associated with the pine butterfly outbreak but the value of the fir timber amply justifies the use of control funds to prevent further damage. Only the areas where severe and permanent damage is expected in 1954 are included in the acreage for which control spraying is recommended.

The control units recommended for spraying in 1954 are briefly described in the section of this report entitled "CONTROL UNIT DATA". Resource values and estimated control costs for these units are given in Table I.

### RECOMMENDATIONS FOR 1954

#### Funds Required

The Council recommends that funds provided under the Forest Pest Control Act be used for spraying all the pine butterfly and spruce budworm infested areas listed in Table I. These funds should be made available as soon as possible, and not later than March 1, 1954, so that bids can be issued and contracts awarded for purchase of insecticide, transportation and storage, and spray application well in advance of the date when actual spraying is to begin. Work will need to be done on at least two landing fields to make them useable for this project.

The Council also recommends that sufficient funds be provided for the necessary biological checking before and during the spraying operation and for an adequate survey to determine the effectiveness of the control project and the need for additional control work in 1955. It is recognized that complete control of extensive outbreaks can seldom be accomplished by one season of spraying. It is therefore expected that there will be need for spraying of certain areas in 1955 and perhaps in subsequent years, especially for control of the spruce budworm.



The estimated costs for the projects proposed for 1954 are based upon experience in the Oregon spruce budworm control projects. The figures used are somewhat higher than for the Oregon projects. Most of the difference is due to the much longer average distance between the areas to be treated and the available landing fields. Much of the terrain is very rough and can not be sprayed effectively by large planes such as the C-47. It is therefore expected that prices bid for spray application will be considerably higher than has been experienced in Oregon.

The following is a breakdown of the estimated costs for the projects recommended for 1954:

Pine Butterfly - 169,000 acres.

Insecticide - - - - -	\$0.50	per	gallon	or	acre
Transportation and storage- - - -	0.10	"	"	"	"
Application - - - - -	0.65	"	"	"	"
Total contractual cost - - - -	\$1.25	"	"	"	"
Contractual cost for 169,000 acres - - - - -	\$211,250.00				
Administration, temporary personnel, landing field improvement, and general services- - - - -	20,000.00				
Surveys and biological checking- - - - -	14,000.00				
Total for butterfly project - - - - -	\$245,250.00				
Total average cost per acre - - - - -	\$1.45				

Spruce Budworm - 197,500 acres.

Insecticide - - - - -	\$0.50	per	gallon	or	acre
Transportation and storage- - - -	0.14	"	"	"	"
Application - - - - -	0.90	"	"	"	"
Total contractual cost - - - -	\$1.54	"	"	"	"
Contractual cost for 197,500 acres - - - - -	\$304,150.00				
Administration, temporary personnel, landing field improvement, and general services- - - - -	20,000.00				
Surveys and biological checking- - - - -	15,000.00				
Total for budworm project - - - - -	\$339,150.00				
Total average cost per acre - - - - -	\$1.72				

Grand total for Southern Idaho projects - - - \$584,400.00

Allocation of Costs

As may be noted from the data in Table II, state and private lands presently involved in the outbreaks of the pine butterfly and the spruce budworm are a very small part of the total infested area. These lands, where they occur, are intermingled with federal ownership. Lands in Forest Industry ownership are presently only slightly involved, consisting of some "timber only" ownership on private lands in the spruce budworm Rattlesnake unit. The balance of the private ownership is held by small owners who have little interest in the timber.

State of Idaho ownership is largely cutover land from which the sawtimber values have been taken. Federal ownership amounts to 96.7 percent of the total recommended for spraying in 1954. For the above reasons it is recommended that State and private participation not be required in supplying funds for the actual spraying of infested areas.

Cooperation by the State and Forest Industry has already been supplied in the pine butterfly egg survey conducted during September and October 1953, amounting to about 100 man days plus transportation and subsistence for part of the men. Representatives of the various lumber companies and the State Department of Forestry have offered further cooperation during the spraying period and in pre-control and post-control surveys in 1954.

#### Research

It is urged that provision be made for doing research work on the pine butterfly and spruce budworm problems in southern Idaho. This is especially urgent for the pine butterfly because outbreaks of this pest occur only at rather long intervals. Full advantage should be taken of the present opportunity to study the habits of the pest and determine what parasites, diseases and other factors are involved in its natural control.

#### Project Administration

Since the areas to be sprayed are nearly all under the administration of the U. S. Forest Service it is recommended that the Forest Service assume full responsibility for the control projects.

#### CONTROL UNIT DATA

Control units recommended for spraying in 1954 are listed in Table I. A brief description of each is as follows:

#### Pine Butterfly Units

##### BOISE N. F.

##### 1. Beaver Creek-Swanholm Unit: (108,000 acres)

This unit embraces the largest remaining body of merchantable ponderosa pine in southern Idaho. The pine butterfly infestation covers approximately 108,000 acres with an average volume of 10,000 feet of pine and 8,000 feet of mixed species per acre.

The mixed species intermingled within this unit are infested with the spruce budworm and considerable damage has already occurred in these stands. An estimated volume for this unit amounts to 1,100 million feet of ponderosa pine and approximately 800 million feet of Douglas-fir, alpine fir and spruce. With an average pine stumpage of \$20.00 per thousand and an average fir stumpage of \$4.00 per thousand, a value of \$22,000,000.00 of pine and \$3,200,000.00 for mixed is determined to be threatened in this area, or a total value for all species of \$25,200,000.00



Several communities in Boise Valley are primarily dependent upon the forest products from this area for their economic stability. There is urgent need to protect this unit from insects if a stabilized lumber industry is to be maintained.

## 2. South Fork Payette-Clear Creek Unit: (36,000 acres)

The timber values threatened by insects in this unit are approximately 360 million feet of ponderosa pine and 180 million feet of Douglas-fir, alpine fir and spruce. These volumes represent a total value of \$6,300,000.00 at the average stumpage rate of \$16.00 per thousand for ponderosa pine and \$3.00 per thousand for the mixed species.

Watershed values, although not expressible in monetary terms, are very significant in this unit. One of the main diversion dams for the irrigation of the Emmett Valley is located on the South Fork of the Payette River below this proposed project. The area has a high value for recreational use and numerous summer homes, campgrounds and lodges are located within the unit.

## 3. Deadwood River Unit: (21,000 acres)

Approximately 5,000 acres within this unit are primarily valuable for watershed and recreation, due to the rough terrain and inaccessibility. This area is located in the central part of the Deadwood River drainage. Although no attempt is made to place a monetary value on the timber in this area, it has sufficient values other than for forest products to warrant the protection costs proposed.

Timber values immediately threatened are 96 million feet of ponderosa pine at an average stumpage of \$10.00 per thousand and 80 million feet of Douglas-fir, spruce and alpine fir at an average stumpage of \$1.00 per thousand or an overall value threatened of \$1,040,000.00.

## 4. Pine Creek Unit: (4,000 acres)

Within this unit there are approximately 25 million feet of ponderosa pine with a stumpage value of \$20.00 per thousand or an overall value of \$500,000.00. There is a light infestation of spruce budworm on the mixed fir within the unit but it is not considered serious enough at present to warrant including the fir in computing the values threatened.

### Spruce Budworm Units

#### BOISE N. F.

Damage by the spruce budworm on the Boise Forest thus far has been evidenced by the killing of reproduction and the top-killing of larger trees, especially alpine fir. Rate of growth has been reduced about one-half and tree vigor has been lessened to a point where attacks by various bark beetles can be expected. The 123,000 acres recommended for control spraying, in addition to about 169,000 acres of mixed pine-fir stands that are to be sprayed for pine butterfly control, include only the areas where severe losses are imminent and

where economic values amply justify the expense. There is a large amount of additional infested acreage where damage is less likely or where present values do not appear to justify control expenditures. The boundaries of units recommended for control have been drawn so as to include what are believed to be sound entomological units. Most of the units represent extensions of the budworm infested area included in the pine butterfly control program.

The following is a brief summary of the resource values present in the various units:

1. Deadwood River Unit: (35,000 acres)

There are approximately 425 million board feet of Douglas-fir, alpine fir and spruce heavily infested with spruce budworm in this unit and threatened with destruction unless control measures are initiated. Although the area is one of the more inaccessible units, a value of \$1.00 per thousand is considered conservative based on present logging operation in the locality. The volume and stumpage rate represents a total stumpage value of \$425,000.00.

2. Clear Creek Unit: (20,000 acres)

The volume of Douglas-fir, alpine fir and spruce threatened in this unit is approximately 320 million board feet with a conservative stumpage value of \$3.00 per thousand, or a total value of \$960,000.00.

3. South Fork Payette River Unit: (17,000 acres)

The mixed species infested by the spruce budworm are comparable to those in Clear Creek in value and volume per acre. There is approximately 272 million feet of Douglas-fir, spruce and alpine fir immediately threatened by the infestation at an average stumpage value of \$3.00 per thousand or an overall value of \$816,000.00 for the unit.

4. Bear River-Silver Creek Unit: (15,000 acres)

Approximately 12,000 acres in this unit are primarily valuable for watershed and recreation purposes. These values are difficult to express in dollars, but are significant enough to warrant the expenditure of \$1.72 per acre for protection against further insect damage. The unit is adjacent to the Sawtooth Wilderness area and public sentiment is strongly in favor of control.

Considerable merchantable mixed sawtimber is located in Johnson Creek and is infested with the spruce budworm. Approximately 36 million board feet of timber is threatened by the attack at a present value of \$2.00 per thousand or an overall value of \$72,000.00.

5. Bald Mountain, Yuba River Unit: (25,000 acres)

The mixed volume on this control unit averages approximately 10,000 board feet per acre with a stumpage value of \$3.00 per thousand, or a total of \$750,000.00.

This area is very important from a watershed and recreation standpoint and borders the Sawtooth Wilderness area. It is located above two large dams on the Boise River.

6. Mores Creek Unit: (11,000 acres)

The timber values represented in this unit amount to approximately 150 million board feet of Douglas-fir, alpine fir and spruce with a total value of \$450,000.00 based on a conservative stumpage rate of \$3.00 per thousand. A heavily traveled highway crosses the unit, making it one of high recreational value.

PAYETTE N. F.

There are nine control units in the proposed Payette budworm project, all except two being within the national forest boundary. Combined, these units contain 69,500 acres of infestation recommended for control spraying.

Tree mortality to date is largely confined to the Big Creek unit but top-killing is imminent on all units. Top-killing induces decay and in young trees, especially, results in a future stand of cull or inferior timber. Tree growth is inhibited and is now at a measurably reduced rate on all units. The timber values in this vicinity have been increasing. It is estimated that the 69,500 acres of infested timber average 10,000 board feet per acre, worth at least an average of \$5.00 per thousand board feet, or a total of \$3,475,000.00. Good quality Douglas-fir, spruce, white and alpine fir species are all attacked on most units, in all size classes. It is estimated that 320,000 acres of spruce and fir types are ultimately threatened. At current stumpage values this represents a potential loss of \$16,000,000.00. All of the control units have recreation use. Likewise, watershed values are high, especially in the Weiser River and Little Salmon River drainages. Most areas have livestock and wildlife grazing values which would be lessened or voided by any windthrow normally resulting from dead trees. All of these and other values are jeopardized by the increased forest fire potential resulting from the threatened widespread timber kill.

Resource values in these nine units may be summarized as follows:

1. Split Creek Unit: (3,000 acres)

This unit is all in National Forest ownership. The estimated volume of 30 million board feet has a value of \$150,000.00. Much of the timber is high quality white fir.

2. Big Creek Unit: (19,000 acres)

The Big Creek unit contains 18,050 acres in National Forest land, 550 acres of private, and 400 acres of State land. It lies largely within the Idaho Wilderness area and recreation considerations are paramount. Camping, fishing, big game hunting, resorts and dude ranching are important activities in the vicinity. The infestation



threatens a vast acreage of adjacent similar timber types, the loss of which would critically impair the desirability of the area for recreation and create a much more difficult fire protection problem. Stumpage values alone for the infested timber would at commercial rates be worth \$950,000.00. Tree mortality resulting from budworm defoliation here is heavier than on any other Payette unit.

3. Pollock-Hat Creek Unit: (4,000 acres)

This area along with unit four below is immediately adjacent to the National Forest boundary in the Little Salmon River drainage. An estimated 40 million board feet of timber is infested, with a stumpage value of \$200,000.00. The State owns 1,300 acres, private 1,000 acres, and 1,700 acres are administered by the Bureau of Land Management.

4. Rattlesnake Unit: (1,500 acres)

This relatively small unit has 400 acres of State land, 550 acres private, and 640 acres under Bureau of Land Management jurisdiction. It is located near unit three above and contains an estimated 15 million board feet of timber worth \$75,000.00.

5. North Star Butte Unit: (4,000 acres)

The unit is comprised of two separate islands of infestation surrounded by dense young fir types. The estimated merchantable volume of 40 million board feet is valued at \$200,000.00, all in National Forest ownership.

6. Lost Creek Unit: (6,000 acres)

All of this unit is in National Forest ownership except 640 acres of State timber. Total value of the 60 million board feet of infested timber is estimated at \$300,000.00.

7. Bear Creek-Bessie Gulch Unit: (13,000 acres)

About 12,040 acres in Forest Service ownership along with 800 acres of State land and 160 private acres are infested. Approximately 130 million board feet are involved, worth \$650,000.00.

8. Indian Creek Unit: (6,000 acres)

This unit has excellent quality timber, with all except 360 acres of private land being in National Forest status. The volume is estimated at 60 million board feet, worth \$300,000.00. This area has a rapidly increasing recreation use, being traversed by the road used by world-wide travelers and recreationists to view famous Hells Canyon from Kinney Point. The adjacent resort town of Cuprum is dependent upon this tourist trade.

9. Boulder Creek Unit: (13,000 acres)

Infested spots have been observed on aerial budworm surveys. More ground checking is needed in the spring of 1954 to determine the

boundary of the area to be sprayed. The unit has excellent fir and spruce types, with a volume of 150 million board feet worth an estimated \$650,000.00. It is the only unit proposed for spraying where there is any question about the severity of the budworm infestation but its position in relation to other units will require that it be sprayed if subsequent examination indicates a heavy budworm population.

SALMON N. F.

Only one area of budworm infestation is known on this national forest but defoliation in this area has been very severe for several years. This is a part of a much larger body of Douglas-fir timber that has considerable local value as a source of mine props and lumber. Control of this infestation may prevent the need for a much larger project within the next few years.

1. Indian Creek: (5,000 acres)

This unit is estimated to contain approximately 40 million board feet of Douglas-fir sawtimber with a stumpage value of \$120,000.00.

TABLE I - ACREAGE OF PINE BUTTERFLY AND SPRUCE BUDWORM INFESTATIONS AND A COMPARISON OF VALUES AND COSTS

Insect	Forest & Units	Acreage to be Treated	Forest Products Values	
			Immediately Threatened	Cost of Control
Pine Butterfly	<u>Boise</u>			
	So. Fk. Payette-Clear Cr.	36,000	\$ 6,300,000.00	\$ 52,240.00
	Deadwood River	21,000	1,040,000.00	30,470.00
	Beaver Cr.-Swanholm	108,000	25,200,000.00	156,730.00
	Pine Creek	4,000	500,000.00	5,810.00
	TOTAL	169,000	33,040,000.00	245,250.00
Spruce Budworm	<u>Boise</u>			
	Deadwood River	35,000	425,000.00	60,095.00
	Clear Creek	20,000	960,000.00	34,340.00
	So. Fk. Payette	17,000	816,000.00	29,190.00
	Bear River-Silver Cr.	15,000	72,000.00	25,755.00
	Bald Mtn.-Yuba River	25,000	750,000.00	42,925.00
	Mores Creek Summit	11,000	450,000.00	18,890.00
	TOTAL	123,000	3,473,000.00	211,195.00
	<u>Payette</u>			
	Split Creek	3,000	150,000.00	5,150.00
	Big Creek	19,000	950,000.00	32,650.00
	Pollock-Hat Creek	4,000	200,000.00	6,870.00
	Rattlesnake	1,500	75,000.00	2,575.00
	N. Star Butte	4,000	200,000.00	6,870.00
	Lost Creek	6,000	300,000.00	10,300.00
	Bear Cr.-Bessie Gulch	13,000	650,000.00	22,320.00
	Indian Creek	6,000	300,000.00	10,300.00
	Boulder Creek	13,000	650,000.00	22,320.00
	TOTAL	69,500	3,475,000.00	119,355.00
	<u>Salmon</u>			
	Indian Creek	5,000	120,000.00	8,600.00
	TOTAL PINE BUTTERFLY	169,000	33,040,000.00	245,250.00
	TOTAL SPRUCE BUDWORM	197,500	7,068,000.00	339,150.00
	GRAND TOTAL	366,500	\$40,108,000.00	\$584,400.00



TABLE II - LAND STATUS OF INFESTED AREAS

Pine Butterfly, Boise National Forest

	<u>Acreage</u>	<u>% of Total</u>
Boise National Forest	164,931	97.6
Bureau of Land Management	-----	----
State of Idaho	2,560	1.5
Private	1,509	.9
Total	<u>169,000</u>	<u>100.0</u>

Spruce Budworm - Boise National Forest

Boise National Forest	121,823	99.0
Bureau of Land Management	-----	----
State of Idaho	1,177	1.0
Private	-----	----
Total	<u>123,000</u>	<u>100.0</u>

Spruce Budworm - Payette National Forest

Payette National Forest	60,550	87.1
Bureau of Land Management	2,340	3.4
State of Idaho	4,420	6.4
Private	2,190	3.1
Total	<u>69,500</u>	<u>100.0</u>

Spruce Budworm - Salmon National Forest

Salmon National Forest	4,655	93.1
Bureau of Land Management	-----	----
State of Idaho	-----	----
Private	345	6.9
Total	<u>5,000</u>	<u>100.0</u>

All Projects

Federal	354,299	96.7
State	8,157	2.2
Private	4,044	1.1
Total	<u>366,500</u>	<u>100.0</u>

